

WATER MANAGEMENT PROGRAM

ASSESSING A WMP

TIMELINE – 50 MINUTES

1. INTRODUCTION AND EXPLANATION

– 5 MINUTES.

2. READ THROUGH THE WMP PROVIDED AND COMMENT ON:

- WHAT PROCEDURES ARE CORRECT?
- WHAT PROCEDURES ARE INCORRECT?
- WHAT PROCEDURES ARE UNNECESSARY?
- WHAT PROCEDURES ARE MISSING?

–20 MINUTES.

FOR HINTS, A CHECKLIST WILL BE PROVIDED ON THE OVERHEAD.

3. GROUP DISCUSSION

–20 MINUTES.

4. FINAL THOUGHTS

– 5 MINUTES.

WATER MANAGEMENT PROGRAM

ASSESSMENT CHECKLIST

- IS THE WATER SYSTEM/USE DESCRIPTION ADEQUATE?
- HOW DOES THE TEAM COMMUNICATE?
- IS THE HOT WATER TEMPERATURE PROCEDURE CORRECT?
- IS THE COLD WATER TEMPERATURE PROCEDURE CORRECT?
- DO THEY PERFORM A RESIDUAL DISINFECTION CHECK?
- HAVE THEY CONSIDERED WATER STAGNATION?
- HAVE AREAS OF SCALE AND SEDIMENT BEEN IDENTIFIED?
- DO THEY TEST FOR *LEGIONELLA*?
- WHAT WOULD THEY DO IF *LEGIONELLA* RESULTS WERE +VE?
- CAN MEDICAL DEVICES TRANSMIT *LEGIONELLA*?
- ARE THERE COOLING TOWERS ON-SITE?
- HOW GOOD ARE THEIR RECORDS?

WATER MANAGEMENT PROGRAM

MISSING PROCEDURES

WHAT FUNDAMENTAL PROCEDURES HAVE NOT BEEN INCLUDED IN THE WMP?

1. IS THERE ENOUGH RESIDUAL DISINFECTANT IN THE WATER? IT IS VITAL THAT THE AGENT E.G. CHLORINE IS ACTIVELY KILLING BACTERIA. THIS REDUCES THROUGH HEAT AND OVER TIME WHEN STAGNATING.

RESPONSE TO FACILITY: THE DISINFECTION AGENT (CHLORINE OR MONOCHLORAMINE) WITHIN THE INCOMING SUPPLY CAN REDUCE DURING HEATING, STORAGE AND FILTRATION. IT IS THEREFORE IMPORTANT TO ASSESS HOW MUCH DISINFECTANT IS ACTIVELY KILLING BACTERIA IN THE HOT AND COLD-WATER SYSTEMS.

RECOMMENDATION: IMPLEMENT WEEKLY MONITORING TO CONFIRM EFFECTIVE DISINFECTION LEVELS, DOCUMENT AND TAKE APPROPRIATE ACTION WHERE RESULTS ARE ADVERSE.

2. THE STAGNATION OF WATER ALLOWS *LEGIONELLA* TO AMPLIFY. ARE THERE AREAS OF LOW WATER FLOW?

RESPONSE TO FACILITY: *LEGIONELLA* CAN GROW IN STAGNANT WATER. AREAS OF STAGNATION INCLUDE VACANT ROOMS, EYE WASH STATIONS, STORAGE TANKS AND ANY AREA OF LOW WATER FLOW. AREAS OF STAGNATION THAT CANNOT BE ENGINEERED-OUT SHOULD BE INCLUDED WITHIN A WATER FLUSHING PROCEDURE. E.G. RUNNING THE OUTLET FOR 1 MINUTE EVERY 5 DAYS.

RECOMMENDATION: INCLUDE WITHIN THE WMP IDENTIFICATION OF AREAS OF STAGNATION AND IMPLEMENT A FLUSHING PROCEDURE. DOCUMENT.

WATER MANAGEMENT PROGRAM

MISSING PROCEDURES

3. *LEGIONELLA* CAN HIDE WITHIN SCALE AND SEDIMENT. EXAMPLES INCLUDE THE BOTTOM OF BOILERS, SHOWER HEADS AND FAUCETS.

RESPONSE TO FACILITY: SCALE AND SEDIMENT USE UP DISINFECTANT AND CREATE A PROTECTED HOME FOR *LEGIONELLA* AND OTHER MICRO-ORGANISMS. AREAS WHERE SCALE AND SEDIMENT BUILD-UP (SHOWER HEADS, FAUCETS, BOILERS) SHOULD BE CLEARED ROUTINELY.

RECOMMENDATION: IMPLEMENT A PROGRAM TO REMOVE SCALE AND SEDIMENT. DOCUMENT.

4. *LEGIONELLA* SAMPLING AND REMEDIATION. VALIDATE YOUR WMP.

RESPONSE TO FACILITY: *LEGIONELLA* SAMPLING IS IMPORTANT TO VALIDATE THE EFFECTIVENESS OF YOUR WMP AND SHOULD INCLUDE THE SAMPLING OF HOT AND COLD WATER AT OUTLETS, WATER FEATURES SUCH AS FOUNTAINS, EYE WASH STATIONS, ICE MACHINES AND SWAMP COOLERS. IT SHOULD ALSO BE USED AFTER ALTERATIONS TO THE PLUMBING TO ENSURE *LEGIONELLA* IS NOT PRESENT. A PREDETERMINED SAMPLING PLAN SHOULD BE INTRODUCED ALONG WITH A PROCEDURE OF ACTIONS IF ADVERSE RESULTS ARE FOUND.

RECOMMENDATION: IMPLEMENT A *LEGIONELLA* SAMPLING PLAN. IT IS RECOMMENDED TO SAMPLE 10 PERCENT OF OUTLETS / DEVICES ANNUALLY, HOWEVER FACILITIES WITH HIGHER RISK POPULATIONS SHOULD CONSIDER SAMPLING MORE FREQUENTLY SUCH AS QUARTERLY.

RECOMMENDATION: SAMPLING SITES SHOULD BE CHOSEN STRATEGICALLY AND ROTATED TO ENSURE THE WHOLE BUILDING HAS BEEN ASSESSED OVER A FIVE ETC. YEAR CYCLE.

RECOMMENDATION: IMPLEMENT A PROCEDURE FOR SAMPLES THAT ARE POSITIVE FOR *LEGIONELLA*. THE PROCEDURE CAN BE BASED ON NUMBERS OF BACTERIA FOUND (E.G. >10; >100; >1000 CFU/ML) OR PERCENTAGE OF POSITIVE RESULTS. THE MAGNITUDE OF THE RESULTS WILL THEN DETERMINE THE ACTION. OPTIONS INCLUDE; FLUSH AND RETEST, DISINFECT WITH RAISED WATER TEMPERATURE OR DOSING WITH A BIOCIDES AND RETEST. DOCUMENT.



WATER MANAGEMENT PROGRAM

MISSING PROCEDURES

GUIDANCE

CDC: DEVELOPING A WATER MANAGEMENT PROGRAM TO REDUCE *LEGIONELLA* GROWTH & SPREAD IN BUILDINGS.

ASHRAE: GUIDELINE 12-2000, MINIMIZING THE RISK OF LEGIONELLOSIS ASSOCIATED WITH BUILDING WATER SYSTEMS.

ASHRAE: 188-2018, LEGIONELLOSIS: RISK MANAGEMENT FOR BUILDING WATER SYSTEMS.

WATER MANAGEMENT PROGRAM TEMPLATE. JUNE 2019.

